

REMARKS

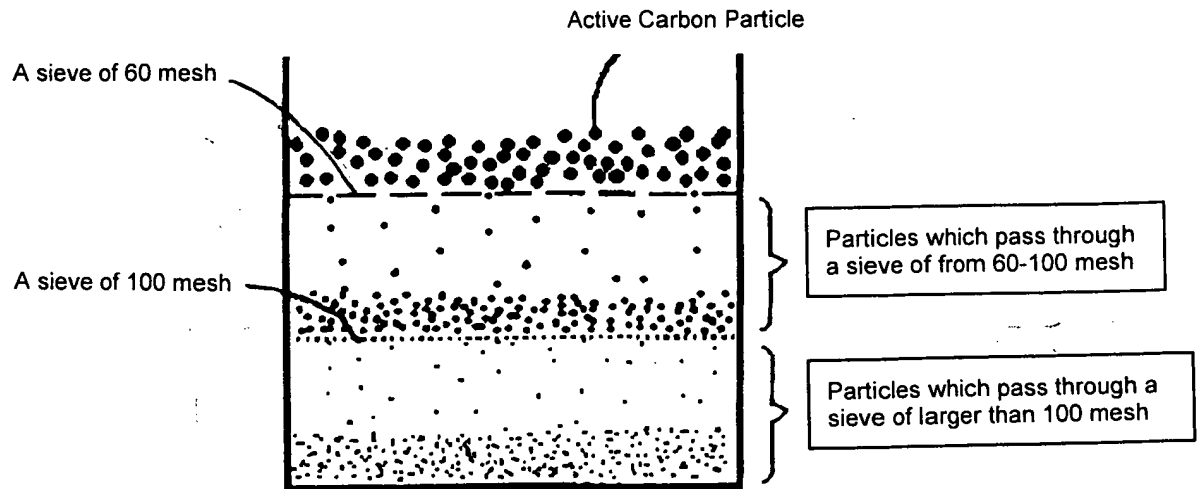
Claims 1, 3-11 and 14-31 are currently pending in the application. Claims 25-31 have been withdrawn from consideration.

Claims 1, 5, 21, 22 and 24 stand rejected under 35 USC §103 as obvious over U.S. Patent No. 5,882,517, to Chen et al (Chen), in view of U.S. Patent 4,753,728, to Vanderbilt et al (Vanderbilt), and further in view of U.S. Patent No. 5,904,854 to Shmidt et al (Shmidt). Claims 1, 3-11 and 14-24 stand rejected under 35 USC §103 as obvious over Japanese Unexamined Patent Application Publication No. 10-85729 (JP '729) in view of Chen and Vanderbilt, and further in view of Shmidt.

Reconsideration of the rejection of claims 1, 3-11 and 14-24 is requested.

Applicant's undersigned attorney wishes to thank Examiner Cintins for the courtesies extended him at the interview on September 8, 2004. During that interview, the Examiner raised the issue with respect to clarity of the particle size for the active carbon. Claim 1 has been amended for further clarity. A first particulate active carbon is characterized as capable of passing through a mesh of 60-100, whereas a second particulate active carbon is characterized as capable of passing through a mesh of larger than 100. This language is consistent with the Detailed Description (see for example the bridging paragraph between pages 16 and 17 of the applicant's Detailed Description).

The Examiner also requested clarification with respect to the particle size in that particles that will pass through a sieve of larger than 100 mesh will also pass through a sieve of from 60-100 mesh. The following drawing demonstrates the conventionally understood meaning of the language in claim 1, as presented herein.



As can be seen in the drawing, the particles that pass through a sieve of 60-100 mesh exclude particles which are capable of passing through a sieve of greater than 100 mesh. One skilled in the art would recognize that the language of claim 1 clearly distinguishes the particle size in the separate first and second particulate active carbon.

In the Action, the Examiner states that applicant has conceded the propriety of the combinations (see pg. 5). Applicant respectfully disagrees with this statement and does not acknowledge that either a) the proposed combination of references is appropriate or b) that in combination, the references make obvious the claimed structure.

As noted in the Declaration of Mr. Tsuyoshi Urabe, previously submitted on April 3, 2003, the use of active carbon particles, in combination with a binder, involves controlling several different parameters to accomplish the ends of performing effective filtering while allowing a significant flow rate of material that is to be filtered through the filter medium. The use of large carbon particles tends to create voids through which the fluid to be filtered can be passed, potentially without being adequately exposed to the active carbon (see paragraph 10 of Mr. Urabe's Declaration). On the other hand, the use of small carbon

particles, as to avoid the problem of voids, tends to reduce the flow rate through the filter (see paragraph 11 of Mr. Urabe's Declaration).

The volume of binder utilized likewise dictates the characteristic of the filter. Too little of the binder may allow the fluid being filtered to form channels so as not to come into contact with the active carbon. Too much of the binder tends to encapsulate the carbon particles to reduce their effectiveness as a filter material (see paragraph 12 of Mr. Urabe's Declaration).

As Mr. Urabe also notes in paragraphs 14-18, the combination of controlling the above parameters, as well as the melt index, is determinative of the effectiveness of the filter in terms of its filtering capacity and the permissible flow rate therethrough.

As previously noted, Chen teaches a broad range of melt index, without an appreciation of the significance of having the melt index in the claimed range of 1.1 to 2.3 g/10min. The Examiner relies on Vanderbilt for the alleged disclosure of the use of a "very low melt index polymer binder" (see page 2) to account for a high flow rate.

The Examiner's analysis, relying upon Chen and Vanderbilt, does not take into consideration the significance of the size of the particles in terms of the quality of the filtering or flow rate. The Examiner relies upon Shmidt for the alleged suggestion of the specific mixture of particle size recited in claim 1. In doing so, the Examiner references a passage in Shmidt, beginning at column 1, line 66 through column 2, line 1, which reads as follows:

An object of the present invention is provide a composite filter element that exhibits reduced flow resistance and improved adsorption properties: including high adsorption activity.

It is respectfully submitted that while the prior art recognizes the use of different size particles in a filter, there is no teaching of or suggestion of a proportion of the specific size of particles as recited in applicant's claim 1. Shmidt is silent in this regard.

Consequently, even in combination, Chen, Vanderbilt and Shmidt do not teach or suggest a) the claimed proportions of specific sizes particles; b) a melt index within the claimed range of 1.1 to 2.3 g/10min; or c) a polymer binder present in a specific claimed proportion with respect to active carbon with a resulting filter having a density of 0.5 to 0.65 g/cm³.

The reliance on JP '729, in combination with Chen, Vanderbilt and Shmidt still lacks any teaching or suggestion of the above noted parameters. Again, in this rejection, the Examiner relies upon Shmidt for the teaching of particles of different size. Shmidt is silent with respect to the particle sizes which are mixed in proportions specifically recited in claim 1. As to the remaining limitations in claim 1, the arguments advanced relative to the allowability of claim 1 over the combination of Chen, Vanderbilt and Shmidt apply equally.

In light of the above, reconsideration of the rejection of claims 1, 3-11 and 14-24, and allowance of the case are requested.

Respectfully submitted,

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